

**CONFIDENTIAL** INFORMATION REPORT

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SUBJECT Steam and Gas Turbine Developments

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1. Bergmann - Borsig, Berlin - Wilhelmsruh

- a. No turbines or turbine blades have been manufactured at this plant to date. There is no prospect that production of these items will start within the next few months since the requisite machinery has not yet been installed.
- b. It has been decided that this plant will manufacture steam turbines for the projected DDR merchant fleet. The ships concerned will have a displacement of 8,000 tons. No written instructions have been received yet.
- c. Recently, Bergmann-Borsig has successfully concluded lengthy tests in the manufacture of various types of heavy machinery and machine tools set in concrete instead of cast-iron or cast steel.

2. WUMAG, G6rlitz

- a. The 400 h.p. experimental gas turbine which has been designed by Dipl. Ing. Kuse and is now under construction at WUMAG, consists of a compressor, two combustion chambers, and two uncoupled parallel turbines. One turbine drives the compressor, which can run at its optimum speed irrespective of the other turbine which provides the power. The compressor is an 8-stage unit, it runs at 900 r.p.m. and delivers gas at 2.5 atmospheres. It is driven by a 2,000 h.p., 6-stage turbine, with an input temperature of 650°C. This turbine is so constructed that at least two rotors may be easily changed for experimental purposes. Parallel to the compressor unit is the 2-stage output turbine of 400 h.p. This second turbine, which runs at 20,000 r.p.m., is coupled to a further compressor which is designed to absorb the power developed.
- b. The input compressor is ready and the turbine rotors, which have been delivered by SAC Krupp-Gruson, are being fitted. So far two rotor wheels have proved unusable because of their poor quality.

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CENTRAL INTELLIGENCE AGENCY

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## 3. The EKM Entwicklungsbüro für Strömungsmaschinen, Dresden

- a. This design office is engaged in designing the following equipment on behalf of the EKM:

Francis turbine.  
Kaplan turbine.  
Turbo-compressor.  
Gearing for water turbines.  
Coal dust mill.  
Hydrodynamic clutch and gearing.  
Turbine blade milling machine.

- b. The Russians have recently shown great interest in the development of small gas-turbines for motor-cars and omnibuses. Professor Hahn and Dipl. Ing. Preiskorn are to discuss this in early August at the SAG Avtovelo factory at Berlin-Adlershof.

- c. The G-18-A Gas Turbine. The specifications of this turbine are as follows:

Power output	-	4,500 h.p.
Speed	-	4,500 r.p.m.
Turbine power	-	15,000 h.p.
Input temperature	-	620°C
Compressor (power absorbed)	-	10,500 h.p.
Pressure	-	3.7 atmospheres.

The turbine is a four-stage unit; the first two have Tinidur blades, and the third and fourth have blades of "marathon" steel. The compressor is a 12-stage unit, six units are of "Hydronal", three of "Igedur", and three of steel.

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